three weeks from the date of injury, vision was practically gone; at the end of six months atrophy of one eye had taken place, with a like progressive condition developing in the other. Had active treatment been forced at the time of the injury, the result might have been modified, possibly averted. It was only when the case was almost hopeless that the hydrargyrum treatment was instituted, which did not check the disease nor even modify it, the inflammation only subsiding when all the inner tissues of the eyes were destroyed.

TWO CASES OF ORBITAL ABSCESS.

BY J. A. LIPPINCOTT, M.D.,
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THE following cases are reported, in the first place because retro-ocular abscess is among the rarer affections that come under our notice, and in the second, because the cases are not without inherent interest, one of them illustrating what I believe to be rather uncommon, viz. very complete recovery, and the other exhibiting the disease at an unusually early age.

In September, 1877, J. L. D., son of a medical friend, a child of rather feeble powers of resistance, one of the class that "take everything," was recovering from a severe attack of erysipelas of the face and scalp, when a slight swelling of the right upper lid attracted his father's attention. When I saw the case—on the following day—I found a small abscess of the lid which I opened with a free incision, but which contained only a few drops of pus. There was at that time no displacement of the eyeball nor any loss of mobility, but there were more pain and tenderness than could be accounted for by the abscess in the lid. The general condition was low. The patient was feeble, irritable and emaciated. Pulse weak, quick and rapid. There was decided anorexia; but great thirst, high temperature, and other febrile symptoms were

not present. The patient was taking tonic doses of quinine and iron. After opening the abscess a small poultice was applied and the tonic treatment continued as before, in the hope that the trouble was merely superficial, and that the *noli me tangere* spirit of the patient was owing rather to his irritability than to any decided tenderness, more especially as he seemed to be as little desirous of being touched in one place as another.

The superficial abscess healed up rapidly, but the pain and tenderness seemed to slowly increase, although no marked symptoms of inflammation manifested themselves. The patient was now put on the syrup of the iodide of iron, gtt. xv. q. t. h., and the quinine increased from four to six grains daily.

On the 5th day after I first saw him the eyeball seemed to be very slightly protruded, although its mobility was perfect. Twenty-four hours later, a sudden and rapid increase of the exophthalmos took place, and was accompanied by markedly increased intensity of the symptoms of febrile disturbance. The eyelids were swollen and discolored, and there was almost complete ptosis. The eyeball was protruded more than half an inch, scarcely movable, and its axis was directed strongly downwards and outwards. There was slight chemosis of the conjunctiva. The cornea was partially exposed, but the exposure had not been of sufficient duration to materially affect its transparency. The pupil was rather small and feebly responsive. A satisfactory view of the fundus was not attainable under the circumstances, but I saw enough to be certain that there was at least no gross lesion present. Besides, the sight appeared unimpaired, and diplopia was observed. There was considerable tension and severe pain. Tenderness was especially marked in the upper and inner orbital region. The child was placed under ether, and an exploratory incision, as recommended by Wells, was made with a narrow bladed tenotome, above and a little to the inner side of the globe, under the upper lid which was well elevated. As the blade came out clean, a second puncture was made, a little further to the inner side, which revealed the presence of pus. The puncture

was converted into a pretty free incision by means of a straight bistoury introduced with the plane of the blade held parallel to the orbital wall, whereupon about a dram and a half of very thick, dirty, and foully-smelling pus came welling up to the surface. A great decrease of tension followed, and some degree of recession of the globe. The propriety of inserting a tent was discussed, but we decided to dispense with it. A large poultice was applied in such a manner as to exert some pressure.

The following day the swelling of the upper lid was greatly intensified, and the conjunctival chemosis was also much increased, owing no doubt partly to the traumatism of the operation, and partly to the irritating effect of the escaping pus. However, under the influence of the supporting treatment and the continuous application of poultices and pressure, the swelling of the lids and conjunctiva gradually subsided, and the eyeball by degrees sank back farther and farther into the orbital cavity. About five weeks after the operation the mobility of the globe had fully returned, and the diplopia had completely disappeared. The exophthalmos continued to diminish gradually, till about a year ago.

Forty-eight hours after operating upon the right eye, it became necessary to evacuate an abscess which had formed underneath the left globe, and which contained about half a dram of pus. No further treatment was required.

A comparatively recent examination of the patient showed no trace of the disease except a scarcely appreciable degree of protrusion of the right eye; the fundus was normal, and the vision was $\frac{20}{xx}$.

CASE II.—Annie R., scarcely twelve months old, was sent to me September 14, 1880, by Dr. J. S. Lusk, of Harmony, Pa., who subsequently gave me a history of the case, from which I make the following extract:—"When I first saw the child, on or about the 24th of August, there was great swelling of the eyelids (on the left side) and chemosis, the conjunctival membrane a pale red, pupil natural, cornea clear, eyeball in its natural position. No purulent discharge, and no redness of the lids. I saw it again on the 27th. No

change except an increase of the swelling. Still no discharge. September 12th, was called out to see the patient with Dr. Crawford, who had been sent for the night of the 1st inst. as the child was suddenly attacked with severe vomiting and purging. I found a marked change—the eyelids enormously swollen and very red, great chemosis, and the eyeball protruding fully to the extent of its diameter, the displaced globe occupying the outer half of the swelling, the pupil widely dilated and looking outward at an angle of 45°. The cornea was clear, and there was a very slight muco-purulent discharge. Diagnosing an intraorbital abscess, we sent the case to you."

When the little patient was brought to my office, the condition was about as above described, except that the divergence was not so pronounced, and the pupil was of natural size and responsive. The pain was apparently not very extreme, as the child, when undisturbed, lay quietly in her mother's arms; but on the approach of any one else she struggled vehemently and developed a pulmonary capacity quite disproportionate to her years; so that ophthalmoscopic investigation was rendered impossible. The pulse was 140, temperature 99°. The eyeball had suddenly become protruded about forty-eight hours before. Previously to that, while the diagnosis was still uncertain, the treatment had consisted of scarifications and the application of a mild astringent collyrium.

Mother and child were at once sent to the Western Pennsylvania Hospital. In the afternoon, the resident physicians assisting, ether was administered, and an aspirating needle introduced above the globe under the upper lid. On reaching the abscess cavity, as was indicated by the cessation of resistance, a quite thin, dark brown, and very fetid pus began to flow from the needle. The puncture was followed by an incision with a narrow bladed bistoury, and more than a dram altogether of fluid allowed to escape. The eyeball receded somewhat, and the tension of the tissues was decidedly lessened. A large poultice was applied, and a quinine and iron mixture prescribed. The diarrhœa proved quite obstinate, but finally yielded to bicarbonate of sodium and Dover's powder.

The day after the operation the lids were more swollen, but the general condition of the patient was much improved. A week later, as the opening had closed and as there was manifestly still pus behind the globe, the child was again anæsthetized, and a bistoury puncture made below and a little to the outer side of the eyeball. This opening was made larger than the previous one. The pus which now escaped was quite different in character from that removed at the first operation. It was thick, creamy, and not disagreeable in odor. A carbolized oil tent was inserted. Pus continued to escape for two weeks, when the opening closed up. At this time the poulticing, which had been kept up uninterruptedly, was discontinued, and a cold compress bandage substituted. But as the eye soon showed symptoms of irritation, poulticing was resumed, and continued for two weeks longer.

On the 28th of October the patient was discharged and taken home. There was now no great swelling of the lids; the exophthalmos was comparatively slight, and the mobility of the eye seemed perfect. I found it impossible to determine the vision; and the little one had formed an opinion of me which effectually precluded a look at the fundus oculi.

A year later the condition of the eye was not materially changed. Subsequently to that time I had no opportunity of examining the patient until two weeks ago. *Status præsens.* Exophthalmos about $\frac{1}{16}$ of an inch. Considerable swelling of the eyelids and partial ptosis. Between the lower lid and globe is a freely movable, pale and gelatinous looking, lobulated mass, nearly $\frac{3}{4}$ inch long and about $\frac{1}{4}$ inch wide. The mother states that there is occasionally some discharge (mucous), although there is none at present. The eyeball is perfectly clear and healthy in appearance. Mobility complete. Pupil normal in size and responsive. Vision limited to light perception. Media transparent. Disc very white and atrophic. Retinal vessels, especially arteries, much contracted.

I may add, in regard to the etiology of the case, that there was no inherited taint of any kind, the only assignable cause being exposure to cold.

DISCUSSION.

DR. THEOBALD.—Quite recently I had a very severe case of this character in the person of my assistant in the hospital. He is a physician aged about thirty-five, and was run down from over work. He first complained of pain about the eye, and there was observed slight chemosis of the conjunctiva and perhaps a little prominence of the eye-ball. This went on increasing, and four or five days later, deep fluctuation was found over the ball, to the inner side. It would have been almost impossible to make the opening under the upper lid, for the ball was prominent and the lids were tense. It seemed, therefore, better to make the incision through the upper lid. A deep incision was made and there was a free flow of creamy pus. Poultices were then applied. The discharge continued and the eye began to recede. Two days after the opening had been made, fluctuation made its appearance below. This point was opened. After this he made a rapid recovery. The interesting point about this case is, that although there was very decided exophthalmos and disturbance of vision, the protrusion entirely disappeared and vision was perfectly restored. There were no changes discoverable in the fundus.

EXPERIENCES IN REFRACTIVE CASES.

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FROM my own experience, I am satisfied that while practice based on ophthalmoscopic examination and test-glass trials answers in a large number of cases, it does not answer in an equal, if not still larger number.

Assuming that it is possible to determine the refractive state ophthalmoscopically, perhaps a violent assumption, practice based on such determination would fail utterly in many cases, and would only succeed in others after tedious renewals of glasses. Hence, determining the refraction by the ophthalmoscope, and acting on it, as a matter of routine practice, I am persuaded is the foundation for rendering our successes and failures about equal.